

## CLAIMS:

1. Apparatus for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the apparatus comprising:
  - a network node data gatherer for obtaining from the vicinity of said user client network node information, and
  - a network node data correlator for correlating said network node information with a network node location map, thereby to provide said server with a location for said user client.
2. The apparatus of claim 1, further comprising a digital media distributor associated with said network data correlator and operable to use said location to govern digital media distribution to said user client.
3. The apparatus of claim 1, further comprising a location confirmation unit for separately determining that said location provided by said client network node information is part of a current communication path to said user client.

4. Apparatus according to claim 1, wherein said network node location map is a map of said network and said client network node information is an identification of an Internet gateway used by said user client.

5. Apparatus according to claim 4, wherein said identification of said Internet gateway is an IP address of said gateway.

6. Apparatus according to claim 5, wherein said network node data gatherer comprises a request inducer unit for causing said user client to request a connectible entity from the server, and wherein said network node data gatherer is operable to intercept network node data from said Internet gateway following said request.

7. Apparatus according to claim 6, wherein said connectible entity is a loadable entity.

8. Apparatus according to claim 7, wherein said loadable entity is web browser loadable entity.

9. Apparatus according to claim 5, further comprising a host name assigner for assigning a host name to said connectible entity for each user client request, thereby to cause said Internet gateway to reveal its identity whilst attempting to locate said hostname.

10. Apparatus according to claim 9, wherein said host name is a unique host name for each user client request.

11. Apparatus according to claim 9, said server comprising a master DNS, said master DNS being operable to give out to said user client an IP address upon requesting by said user client.

12. Apparatus according to claim 11, said server further comprising at least one secondary DNS.

13. Apparatus according to claim 9, wherein said connectible entity is assignable a unique host name for each transaction request.

14. Apparatus according to claim 6, wherein said loadable entity is a web page.

15. Apparatus according to claim 6, wherein said loadable entity is a web page component.

16. Apparatus according to claim 6, wherein said loadable entity is an image.

17. Apparatus according to claim 6, wherein said loadable entity is a loadable executable module.

18. Apparatus according to claim 13, wherein said correlator is operable to correlate a received ISP DNS with a user client request using said host name.

19. Apparatus according to claim 1, wherein said map comprises physical location data of network nodes.

20. Apparatus according to claim 1, wherein said map comprises topological location data of network nodes.

21. Apparatus according to claim 19, further comprising a service level controller for selecting service criteria to be provided to said user client based on said physical location.

22. Apparatus according to claim 19, operable to log a physical location related to a sale.

23. Apparatus according to claim 19, operable to associate alarms with predetermined physical locations.

24. Apparatus according to claim 19 arranged to access a geographically arranged database, thereby to associate service criteria with predetermined physical locations.

25. Apparatus according to claim 19, arranged to access a geographically arranged database, thereby to associate alarms and service criteria with predetermined physical locations.

26. Apparatus according to claim 21, wherein said service criteria comprise criteria to conform with location-based legal restrictions.

27. Apparatus according to claim 21, wherein said service criteria comprise criteria to conform to location-based contractual restrictions.

28. Apparatus according to claim 21, wherein said service criteria comprise criteria to conform to location-based commercial restrictions.

29. Apparatus according to claim 20, further comprising a service level controller for selecting service criteria to be provided to said user client based on said topological location.

30. Apparatus according to claim 20, further comprising a routing controller for controlling routing to said user client based on said topological location.

31. Apparatus according to claim 1, said network node data gatherer comprising a request for a user telephone number, said apparatus being operable to confirm contact via said telephone number by giving a user a identification for looping using said user client and a connection made using said telephone number,

32. Apparatus according to claim 31, wherein said map comprises a physical map of said telephone network, usable to correlate a physical location to a telephone number.

33. Apparatus according to claim 1, said network node data gatherer comprising a request for the user to contact a telephone number, said apparatus being operable to confirm contact via said telephone number by giving a user an identification for looping back to said apparatus using said user client and a connection made using said telephone number.

34. Apparatus according to claim 33, wherein said map is a physical map of said telephone network, usable to correlate a physical location to a telephone number.

35. Apparatus according to claim 31, further comprising an authentication unit operable to obtain a modem telephone number of said user client, thereby to attempt to establish contact with said user client.

36. Apparatus according to claim 31, further comprising an authentication unit contactable by the modem of said user client, thereby to attempt to establish contact with said user client.

37. Apparatus according to claim 31, further comprising an authentication unit operable to obtain a modem telephone number of said user client and to determine that contact is established with said user client using said given modem number.

38. Apparatus according to claim 37, said authentication unit being operable to send authentication information via said connection for return via said network connection.

39. Apparatus according to claim 36, said authentication unit being operable to send authentication information via said connection for return via said network connection.

40. Apparatus according to claim 37, said authentication unit being operable to send authentication via said network for return via said direct connection.

41. Apparatus according to claim 36, said authentication unit being operable to send authentication via said network for return via said direct connection.

42. Apparatus according to claim 1, further comprising:  
trace routing functionality for determining a network node distance and route of a user client by sending and attempting to receive response messages having varied time to live values.

43. Apparatus according to claim 42 further comprising:  
combining functionality for combining trace routing from several locations to the user in order to enhance accuracy.

44. Apparatus according to claim 42 further comprising:  
a correlator for correlating between said determined location and said determined network node distance and route.

45. Apparatus according to claim 1, wherein said network node data gatherer comprises a connectible entity for carrying out trace routing to said



server from said user client and sending results of said trace routing to said server.

46. Apparatus according to claim 1, wherein said network node data gatherer comprises a software agent locatable at a network access node.

47. Apparatus according to claim 46, wherein said network access node is a digital network access node.

48. Apparatus according to claim 46, said digital network access node being a digital line access multiplexer.

49. Apparatus according to claim 1, said network node being an internet service provider comprising a plurality of servers and said network node data gatherer comprising functionality to determine additional information of said user client from an individual one of said plurality of servers with which it connects.

50. Apparatus according to claim 49, said network node data gatherer being operable to obtain said additional information by correlating with a user database of the Internet service provider.

51. Apparatus according to claim 1, comprising a database builder for building a database of user clients to correlate obtained location data with other data concerning said user clients.

52. Apparatus according to claim 1, further comprising a line measuring unit for measuring connection line qualities, thereby to obtain said location information.

53. Apparatus according to claim 52, said line measuring unit comprising a connection comparison unit for comparing line qualities of different connections.

54. Apparatus according to claim 52, said qualities being ones of a group comprising: signal to noise ratio, specific frequency attenuation, end path delay, echo characteristics, delay variance, and compression artifacts.

55. Method for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the method comprising:

obtaining, from the vicinity of said user client, network node information, and

correlating said network node information with a network node location map, thereby to provide said server with a location for said user client.

56. The method of claim 55, further comprising separately determining that said location provided by said client network node information is part of a current communication path to said user client.

57. The method of claim 55, wherein said client network node information is an identification of an Internet gateway used by said user client.

58. The method of claim 57, wherein said identification of said Internet gateway is a DNS of said gateway.

59. The method of claim 58, further comprising:  
causing said user client to request a connectible entity from the server,  
and  
intercepting network node data from said Internet gateway following said request.

60. The method of claim 59, further comprising assigning a host name to said connectible entity for each user client request, thereby to cause said Internet gateway to attempt to locate said hostname and reveal its identity in the course thereof.

61. The method of claim 59, wherein said assigning a host name comprises assigning a unique host name.

62. The method of claim 60, said server comprising a master DNS, said method comprising said master DNS giving to said user client an IP address upon requesting by said user client.

63. The method of claim 62, said server further comprising at least one secondary DNS being operable to provide IP addresses to said user client.

64. The method of claim 60, comprising assigning to said connectible entity a host name for each transaction request.

65. The method of claim 64, comprising providing a unique host name for each user client for each session.

66. The method of claim 59, wherein said loadable entity is a web page.

67. The method of claim 59, wherein said loadable entity is an image.

68. The method of claim 59, wherein said loadable entity is a loadable executable module.

69. The method of claim 59, wherein said loadable entity is a web component.

70. The method of claim 64, comprising correlating a received ISP DNS with a user client request using said host name.

71. The method of claim 55, wherein said map comprises physical location data of network nodes.

72. The method of claim 55, wherein said map comprises topological location data of network nodes.

73. The method of claim 71, further comprising selecting service criteria to be provided to said user client based on said physical location.

74. The method of claim 71, comprising logging a physical location related to a sale.

75. The method of claim 71, further comprising associating alarms with predetermined physical locations.

76. The method of claim 73, wherein said service criteria comprise criteria to conform with location-based legal restrictions.

77. The method of claim 72, further comprising selecting service criteria to be provided to said user client based on said topological location.

78. The method of claim 72, further comprising controlling routing to said user client based on said topological location.

79. The method of claim 55, comprising making a request for a user telephone number, said method being operable to make contact using said telephone number to give a user a identification for returning via said user client, said map being a physical map usable to correlate a physical location to a telephone number.

80. The method of claim 55, comprising making a request for a user telephone number, said method being operable to verify contact via said telephone number by giving a user a identification via said network for returning via a direct connection using said telephone number, said map being a physical map usable to correlate a physical location to a telephone number.

81. The method of claim 79, further comprising the step of obtaining a modem telephone number of said user client, thereby to attempt to establish contact with said user client.

82. The method of claim 80, further comprising requesting the user to contact a telephone number, thereby to confirm contact via said telephone number by giving a user an identification for looping back using said user client and a connection made using said telephone number.

83. The method of claim 82, further comprising an authentication stage of receiving a connection from the modem of said user client, thereby to attempt to establish contact with said user client.

84. The method of claim 82, further comprising sending authentication information via said connection for return via said network connection.

85. The method of claim 82, comprising sending authentication via said network for return via said direct connection.

86. The method of claim 55, further comprising:

trace routing functionality for determining a network node distance and route of a user client by sending and attempting to receive response messages having varied time to live values,

and correlating between said determined location and said determined network node distance and route.

87. The method of claim 86, further comprising adding data of further nodes to said correlation to improve accuracy.

88. The method of claim 55, comprising sending a loadable entity to said receiving client for carrying out trace routing to said server from said user client and sending results of said trace routing to said server.

89. The method of claim 55, comprising locating a software agent at a network access node to gather data of a receiving client connecting via said node.

90. The method of claim 89, wherein said network access node is a digital network access node.

91. The method of claim 89, said digital network access node being a digital line access multiplexer.



92. The method of claim 55, said network node being an internet service provider comprising a plurality of servers, the method further comprising determining additional information of said user client from an individual one of said plurality of servers with which it connects.

93. The method of claim 92, further comprising obtaining said additional information by correlating with a user database of the Internet service provider.

94. The method of claim 55, further comprising building a database of user clients to correlate obtained location data with other data concerning said user clients.

95. The method of claim 55, wherein said network node information is obtained in response to an interaction request from said user client and comprising a step of correlating said network node information with said interaction request by sending said user client a hostname to use in a data request with said network node information.

96. Apparatus for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the apparatus comprising:

a network node data gatherer for obtaining from the vicinity of said user client network node information, and

a network node data correlator for correlating said network node information with a network node location map, thereby to provide said server with a location for said user client,

and wherein said network node location map is a map of said network and said client network node information is an identification of an Internet gateway used by said user client.

97. The apparatus of claim 96, further comprising a digital media distributor associated with said network data correlator and operable to use said location to govern digital media distribution to said user client.

98. The apparatus of claim 96, further comprising a location confirmation unit for separately determining that said location provided by said client network node information is part of a current communication path to said user client.

99. Apparatus according to claim 96, wherein said identification of said Internet gateway is an IP address of said gateway.

100. Apparatus according to claim 99, wherein said network node data gatherer comprises a request inducer unit for causing said user client to request

a connectible entity from the server, and wherein said network node data gatherer is operable to intercept network node data from said Internet gateway following said request.

101. Apparatus according to claim 100, wherein said loadable entity is a browser loadable entity.

102. Apparatus according to claim 100, further comprising a host name assigner for assigning a host name to said connectible entity for each user client request, thereby to cause said Internet gateway to reveal its identity whilst attempting to locate said hostname.

103. Apparatus according to claim 102, wherein said host name is a unique host name for each user client request.

104. Apparatus according to claim 102, said server comprising a master DNS, said master DNS being operable to give out to said user client an IP address upon requesting by said user client.

105. Apparatus according to claim 104, said server further comprising at least one secondary DNS.

106. Apparatus according to claim 102, wherein said connectible entity is assignable a unique host name for each transaction request.

107. Apparatus according to claim 100, wherein said loadable entity is a web page.

108. Apparatus according to claim 100, wherein said loadable entity is a web page component.

109. Apparatus according to claim 100, wherein said loadable entity is an image.

110. Apparatus according to claim 100, wherein said connectible entity is a loadable executable entity.

111. Apparatus according to claim 110, wherein said loadable entity is a loadable executable module.

112. Apparatus according to claim 106, wherein said correlator is operable to correlate a received ISP DNS with a user client request using said host name.

113. Apparatus according to claim 96, wherein said map comprises physical location data of network nodes.

114. Apparatus according to claim 96, wherein said map comprises topological location data of network nodes.

115. Apparatus according to claim 113, further comprising a service level controller for selecting service criteria to be provided to said user client based on said physical location.

116. Apparatus according to claim 113, operable to log a physical location related to a sale.

117. Apparatus according to claim 113, operable to associate alarms with predetermined physical locations.

118. Apparatus according to claim 113 arranged to access a geographically arranged database, thereby to associate service criteria with predetermined physical locations.

119. Apparatus according to claim 113, arranged to access a geographically arranged database, thereby to associate alarms and service criteria with predetermined physical locations.

120. Apparatus according to claim 115, wherein said service criteria comprise criteria to conform with location-based legal restrictions.

121. Apparatus according to claim 115, wherein said service criteria comprise criteria to conform to location-based contractual restrictions.

122. Apparatus according to claim 115, wherein said service criteria comprise criteria to conform to location-based commercial restrictions.

123. Apparatus according to claim 114, further comprising a service level controller for selecting service criteria to be provided to said user client based on said topological location.

124. Apparatus according to claim 114, further comprising a routing controller for controlling routing to said user client based on said topological location.

125. Apparatus for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the apparatus comprising:

a network node data gatherer comprising a request for a user telephone number,

a network node data correlator for correlating said user telephone number with a physical map of said telephone network, said map being usable to correlate a physical location to a telephone number network node location map, thereby to provide said server with a location for said user client, and

a digital media distributor associated with said network data correlator and operable to use said location to govern digital media distribution to said user client, said apparatus further comprising an authentication unit being operable to confirm contact via said telephone number by giving a user an identification for looping around said network and said user client and a connection made using said telephone number.

126. Apparatus according to claim 125, said authentication unit being operable to obtain a modem telephone number of said user client, thereby to attempt to establish contact with said user client.

127. Apparatus according to claim 125, said authentication unit being operable to obtain a modem telephone number of said user client and to determine that contact is established with said user client using said given modem number.

128. Apparatus according to claim 127, said authentication unit being operable to send authentication information via said direct connection for return via said network connection.

129. Apparatus according to claim 127, said authentication unit being operable to send authentication via said network for return via said direct connection.

130. Apparatus according to claim 125, further comprising a line measuring unit for measuring connection line qualities, thereby to obtain confirmation of said location.

131. Apparatus according to claim 130, said line measuring unit comprising a connection comparison unit for comparing line qualities of different connections.

132. Apparatus according to claim 130, wherein said qualities include any ones of a group comprising: signal to noise ratio, specific frequency attenuation, end path delay, echo characteristics, delay variance, and compression artifacts.

133. Apparatus according to claim 125, comprising an interface for interfacing to a telephone number resolving system, thereby to obtain service level conditions associated with particular telephone numbers.



134. Apparatus according to claim 125, said network node data gatherer comprising a request for the user to contact a telephone number, said apparatus being operable to confirm contact via said telephone number by giving a user an identification for looping back to said apparatus using said user client and a connection made using said telephone number.

135. Apparatus according to claim 125, further comprising an authentication unit contactable by the modem of said user client, thereby to attempt to establish contact with said user client.

136. Apparatus according to claim 135, said authentication unit being operable to send authentication information via said connection for return via said network connection.

137. Apparatus according to claim 135, said authentication unit being operable to send authentication via said network for return via said direct connection.

138. Apparatus for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the apparatus comprising:

a network node data gatherer for obtaining from the vicinity of said user client network node information,

a network node data correlator for correlating said network node information with a network node location map, thereby to provide said server with a location for said user client,

trace routing functionality for determining a network node distance and route of a user client by sending and attempting to receive response messages having varied time to live values,

and a second correlator for correlating between said determined location and said determined network node distance and route.

139. Apparatus according to claim 138, said second correlator being further operable to correlate using additional nodes to improve result accuracy.

140. Apparatus for determining a location of a user client in an electronic interaction with a server over a network having a plurality of nodes at different locations, the apparatus comprising:

a network node data gatherer for obtaining from the vicinity of said user client network node information, and

a network node data correlator for correlating said network node information with a network node location map, thereby to provide said server with a location for said user client,

and wherein said network node data gatherer is a software agent for placing at least one of said plurality of nodes.

141. Apparatus according to claim 140 wherein said network access node comprises a digital network access node.

142. Apparatus according to claim 141, wherein said digital network access node comprises a digital line access multiplexer.